

# Reducing Energy Usage in a Water Utility: Supply-Side and Demand Management

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**Golden State**  
Water Company

A Subsidiary of American States Water Company

# Golden State Water Company

- Formerly Southern California Water Company
- 3 Regions serving 250,000 + connections
- 1 in 30 Californians
- Chaparral Water near Scottsdale, AZ
- 5 DoD bases for water and wastewater
- Bear Valley Electric Co.



# Region III

- Orange County Communities
- Foothill Communities
- Mountain/Desert Communities
- 100,000 + services

Wells	Boosters	Mains (ft)	Tanks	Capacity (kgal)
126	187	6,351,840	86	63,238

# Energy Usage (2004 to 2005)

- Electric primary energy source
- Two gas boosters
- Supply combination of purchased & wells
  - 52% Purchased
  - 48% Wells
- 99% energy consumption is electric

	Water Prod (ccf)	Energy (kwh)
2004	35,073,383	41,291,669
2005	33,730,403	37,590,698
% Chg.	4%	9%



# GSWC Primary Strategies

- Manage system responsive to TOU rates
- Operate wells considering lift and motor efficiencies
- Motor and pump maintenance
- Boosters operate to system pressure needs
- Balance purchased water with well pumping

# Supply-Side Opportunities

- Leak detection and repair
- System pressure control and reduction
  - Reduce leaks
  - Variable frequency drives
- Motor and pump maintenance and efficiencies
- Flexible storage options for off peak operation
  - Double inlet pipes to increase refilling
  - Consider greater storage capacity
- Facility DSM program



# Supply-Side Issues

- Cost effectiveness
- Cost recovery
- Rate payer impacts
- Incentive programs
- Whole system impacts
- System flexibility
  - Closed system with no storage
  - Storage supported
- Water quality considerations

# Utility Facility Opportunities

- Maximize use of energy utility incentives
  - Lights
  - Windows
  - Cool roof
  - Sensors
  - Energy Star products
  - Water efficiency products
    - High efficiency toilets
    - No-water urinals
    - Sensor faucets and on-demand hot water systems
- Renewable generation sites



# DSM Water/Energy Partnerships

- GSWC partnering with SCE/Gas Co on residential survey program (w/ LADWP)
  - Web-based survey
  - Mail-in survey
  - In-home survey
  - Phone survey
- Shared costs and marketing
- Wider application
- Promotion of other rebates & incentives

# Demand-Side Water Conservation

- Participate in MWD regional programs
- Residential and CII targeting
- Hot and cold water measures
- Opportunities to link to energy DSM
  - Partnerships
  - Shared customers/shared costs
  - Model for Public Benefits Charge